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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/087,558	02/28/2002	Ross S. Dando	MI22-1940	2179

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EXAMINER	
ZERVIGON, RUDY	

ART UNIT	PAPER NUMBER
1763	4

DATE MAILED: 06/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/087,558	DANDO ET AL.	
	Examiner	Art Unit	
	Rudy Zervigon	1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 February 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-61* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-61* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 February 2002* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *2,3* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "purge gas source" must be shown or the feature canceled from the claims. No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1, require "a valve proximate the body having at least two inlets and at least one outlet". It is unclear if the "valve" or the "body" is required to have "at least two inlets and at least one outlet". The Office Action assumes, as supported by the specification, that it is the "body" that is required to have "at least two inlets and at least one outlet".

3. Claims 56-60 recite the limitation "structure". There is insufficient antecedent basis for this limitation in the claims.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-7, 12, 13-18, 20-27, 29, 30, 45, 46, 54, and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones et al (USPat. 5,254,210) in view of Abe et al (USPat. 5,200,388). Jones teaches a reactive gas source precursor (GM1-GM4; column 3, line 61 - column 4, line 24; Figure 1) feeding manifold (80; column 3, line 61 - column 4, line 24; Figure 1,2) assembly, comprising: a body (injection header where all four three-way valves 81 feed to (not labelled); Figure 1,2) comprising a plenum chamber (inherency of any piping conduit as demonstrated by Applicant's Figure 1); a valve (any of the four valves 81; Figures 1,2) proximate the body (injection header where all four three-way valves 81 feed to (not labelled); Figure 1,2) having at least two inlets (the body has four inlets as shown in Figure 1) and at least one outlet (the body has one outlet – feeding reactor 25 as shown in Figure 1), at least one valve (any of the four valves 81; Figures 1,2) inlet, all having angles of 0° relative to each other ("no plenum chamber inlet is angled"), and being configured for connection with a reactive precursor

(GM1-GM4; column 3, line 61 - column 4, line 24; Figure 1) source, at least one valve outlet feeding to a precursor (GM1-GM4; column 3, line 61 - column 4, line 24; Figure 1) inlet to the plenum chamber (inherency of any piping conduit as demonstrated by Applicant's Figure 1); and the body (injection header where all four three-way valves 81 feed to (not labelled); Figure 1,2) comprising a plenum chamber (inherency of any piping conduit as demonstrated by Applicant's Figure 1) outlet configured to connect with a substrate processing chamber, as required by claim 1.

Jones further teaches, the manifold (80; column 3, line 61 - column 4, line 24; Figure 1,2) assembly of claim 1 wherein the valve (any of the four valves 81; Figures 1,2) has only two inlets and only one outlet (see 80; Figure 1,2), as claimed in claim 3 – Regarding "inlets" and "outlets" for Jones's valves, and the identity of the gases flowing there through as being a "purge gas", it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter , 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey,152 USPQ 235 (CCPA 1967); In re Otto , 136 USPQ 458, 459 (CCPA 1963); MPEP2111.02).

Jones further teaches the manifold (80; column 3, line 61 - column 4, line 24; Figure 1,2) assembly wherein the plenum chamber (inherency of any piping conduit as demonstrated by Applicant's Figure 1) is longitudinally elongated having a longitudinal axis (long axis), the plenum chamber (inherency of any piping conduit as demonstrated by Applicant's Figure 1)

having a first longitudinal axis end (upstream-most 81) and a second longitudinal axis end (downstream-most 81), the plenum chamber outlet being proximate the second end, as claimed in claim 12.

Jones further teaches an elongated segment (conduit piping between each of 81 and Jones's body) joining the precursor feed streams Jones's plenum chamber precursor inlet.

Jones does not teach a purge stream having a purge inlet to Jones's plenum chamber. Jones does not teach a structure on the body (injection header where all four three-way valves 81 feed to (not labelled); Figure 1,2) configured to mount the body to his substrate processing chamber (25; Figure 1).

Abe teaches a similar precursor deliver system for film depositions (Figure 6; column 7, lines 4-22). Inclusive, Abe teaches a purge stream (precursor header to "exhaust device"; not labelled) having a purge inlet to a plenum chamber (precursor header; not labelled), the purge inlet is shown angled at 90° to the precursor inlet.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a purge stream having a purge inlet, on a longitudinal axis and angled at 90° to the precursor inlet, to Jones's plenum chamber as taught by Abe.

Motivation to include a purge stream having a purge inlet to Jones's plenum chamber as taught by Abe is for optimizing the composition of the gas delivered to the reactor as taught by Abe (column 4, lines 43-54).

7. Claims 8-11, 19, 28, 31-44, 48-53, and 56-61 are ejected under 35 U.S.C. 103(a) as being unpatentable over Jones et al (USPat. 5,254,210) and Abe et al (USPat. 5,200,388) in view of McMillan et al (USPat. 5,316,579). Jones and Abe are discussed above. Jones and Abe do not

teach a structure on the body configured to mount the body to a substrate processing chamber, as claimed in claim 8.

McMillan teaches a similar precursor gas delivery system (Figure 5; column 10; lines 10-25) including a flange structure (see 114/102 interface) on the body (114).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include McMillan's flange structure (see 114/102 interface) on the body (114) as part of Jones and Abe's process gas delivery system.

Motivation to include McMillan's structure on the body as part of Jones and Abe's process gas delivery system is for ensuring hermetic integrity of the system.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. USPat. 4,036,170; 4,263,091; 6,200,387; 5,765,585; 4,989,637; 4,761,269; 4,689,094; US 2002/0192369 A1

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Rudy Zervigon whose telephone number is (703) 305-1351. The examiner can normally be reached on a Monday through Thursday schedule from 8am through 7pm. The official after final fax phone number for the 1763 art unit is (703) 872-9311. The official before final fax phone number for the 1763 art unit is (703) 872-9310. Any Inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Chemical and Materials Engineering art unit receptionist at (703) 308-0661. If the examiner can not be reached please contact the examiner's supervisor, Gregory L. Mills, at (703) 308-1633.

JEFFRIE R. LUND
PRIMARY EXAMINER